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The genus *Xylaria* in the south of China – 3. *X. atroglobosa* sp. nov.

Hai-xia Ma[1,2], Larissa Vasilyeva[3] & Yu Li[2]*

[1] *Institute of Tropical Bioscience and Biotechnology, Chinese Academy of Tropical Agricultural Sciences, Haikou 571101, China*

[2] *Institute of Mycology, Jilin Agricultural University, Changchun 130118, China*

[3] *Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, Vladivostok 690022, Russia*

* Correspondence to: *yuli966@126.com*

Abstract—*Xylaria atroglobosa* (*Xylariales*, *Xylariaceae*) is described from China as a new species. It is characterized by its semi-globose stromata and ascospores with an appendage on one end. Photographs of stromata and microstructures are provided.

Key words—*Ascomycota*, pyrenomycetous fungi, taxonomy

Introduction

The southern provinces of China are characterized by a high diversity of *Xylaria* species, and many species known only from southeastern Asia have been found in southern China. *Xylaria badia* Pat., described from the Gulf of Tonkin area in Vietnam (Patouillard 1891), has been reported from Taiwan (Ju & Rogers 1999), Thailand (Thienhirun & Whalley 2004, Okane et al. 2008), Malaysia (Whalley & Whalley 2007), and China's Yunnan Province (Ma 2011). *Xylaria bambusicola* Y.M. Ju & J.D. Rogers, described from Taiwan (Ju & Rogers 1999), is found in Thailand (Okane et al. 2008) and Yunnan Province (Ma 2011). *Xylaria brunneovinosa* Y.M. Ju & H.M. Hsieh is only known from Taiwan (Ju & Hsieh 2007) and Yunnan Province (Ma 2011); *X. copelandii* Henn., restricted to *Calamus* spp. and described from Philippines (Hennings 1908), has been reported from China's Guangdong Province (Ma 2011); and *X. papulis* Lloyd was described from China (Lloyd 1921) and later found in Papua New Guinea (Van der Gucht 1995), Philippines, Taiwan (Ju & Rogers 1999), and Thailand (Okane et al. 2008). A much longer list, including two recently described new species, *X. choui* H.X. Ma et al. and *X. ficicola* H.X. Ma et al. (Ma et al. 2011a,b), would demonstrate the very unique species composition of the

genus in southeastern Asia. This paper contributes to our knowledge of *Xylaria* in the south of China.

Materials & methods

Collection, preservation, and identification methods follow Ju and Rogers (1999). Microscopic features and measurements were made from slide preparations mounted in water and Melzer's reagent. The photographs of the asci, ascal apical ring, and ascospores were taken by using a VHX-600E microscope of the Keyence Corporation. The photographs of stromatal surface were taken with a ZSA30w microscope and S70 Canon camera. The studied specimen is deposited at the Herbarium of Kunming Institute of Botany, Chinese Academy of Sciences (HKAS).

Taxonomy

Xylaria atroglobosa H.X. Ma, Lar.N. Vassiljeva & Yu Li, sp. nov. Pl. 1–6

MycoBank MB 563468

A X. fraseri *structura stromatarum et magnitudine ascosporarum, a* X. atrosphaerica *stromatis et ascosporis majoribus, ascosporae appendicula rotundata, hyalina, noncellulari praeditae, differt.*

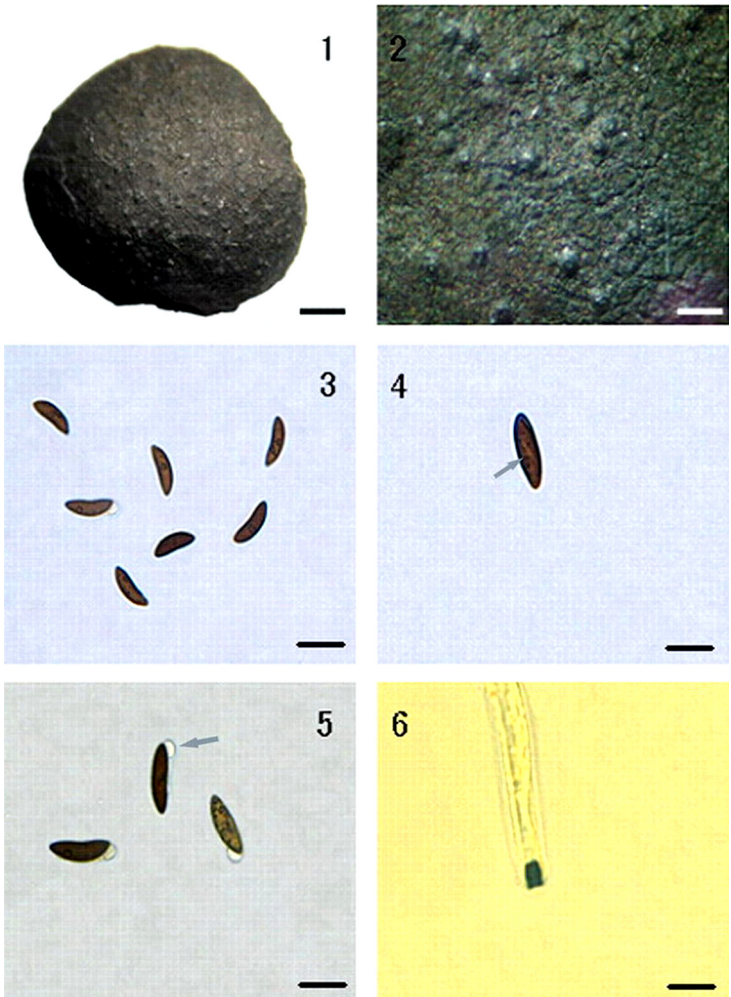
Type: China, Yunnan Province, Xishuangbanna Tropical Botanical Garden, on rotten wood, 9 Aug 1991, Peigui Liu (**Holotype**, HKAS 24003).

Etymology: Refers to the color and shape of the stroma.

Stroma hemispherical to depressed-spherical, attached to substrate with narrow connective, 3–6 mm high × 0.6–1.2 cm diam., externally black, internally white, woody, texture hard, surface smooth and perithecial mounds inconspicuous; perithecia embedded in stromata, spherical, 0.5–0.8 mm diam.; ostioles papillate. Asci 8-spored, cylindrical, long-stipitate, the spore-bearing part 150–170 μm long, with apical ring bluing in Melzer's iodine reagent, urn-shaped, 4.5–5 × 3.5–5 μm. Ascospores brown, unicellular, ellipsoid-inequilateral to crescent-shaped to navicular, with broadly to narrowly rounded ends, bearing a round hyaline noncellular appendage up to 6–7 × 3–4 μm at the one end, smooth, (24–)24.5–27(–29) × 7.5–9 μm, with oblique germ slit much less than spore-length.

Comments– *Xylaria atroglobosa* is similar to *X. fraseri* M.A. Whalley et al. (Whalley et al. 2000) in stromatal morphology and ascospore size, although its ascospores are slightly shorter. However, the stromata of *X. atroglobosa* lack white scales or a peeling layer at the surface, whereas stromata of *X. fraseri* are overlaid with a white to yellowish white peeling layer cracked into 0.2–0.4 mm broad scales. Furthermore, the ascospores of *X. fraseri* lack an appendage and their germ slit is straight.

In stromatal morphology, the new species somewhat resembles *X. atrosphaerica* (Cooke & Massee) Callan & J.D. Rogers, which can be differentiated



Figs. 1–6. *Xylaria atroglobosa*: 1—Stroma. 2—Stromatal surface. 3—Ascospores. 4—Germ slit. 5—Ascospores bearing appendage. 6—Ascal apical ring. Scale bars: 1 = 2 mm, 2 = 0.25 μm, 3 = 24 μm, 4 = 13.5 μm, 5 = 16.5 μm, 6 = 8 μm

by its smaller stromata (Callan & Rogers 1990) and smaller ascospores (18–20 × 6–7 μm) that lack an appendage.

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